

POISON

KEEP OUT OF REACH OF CHILDREN
READ SAFETY DIRECTIONS BEFORE OPENING OR USING

Cormoran[®] Insecticide

ACTIVE CONSTITUENTS:

100 g/L NOVALURON

80 g/L ACETAMIPRID

SOLVENT: 395 g/L N-METHYL PYRROLIDONE

GROUP **15 | 4A** INSECTICIDE

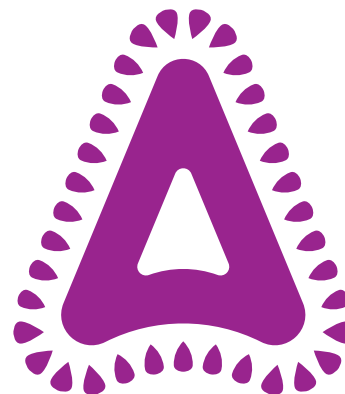
Crops: Apples, Pears

Controls: Apple Dimpling Bug, Codling Moth, Light Brown Apple Moth,
Longtailed Mealybug, Plague Thrips and Tuber Mealybug

Formulation type

Emulsifiable
Concentrate

EC



ADAMA

adama.com

CONTENTS: 1 - 110 L

DIRECTIONS FOR USE

RESTRAINTS:

DO NOT apply CORMORAN[®] during flowering.
DO NOT apply by aircraft.

SPRAY DRIFT RESTRAINTS:

DO NOT apply when wind speed is less than 3 or more than 20 km/h as measured at the application site.

DO NOT apply during surface temperature inversion conditions at the application site.

DO NOT direct the spray above trees during airblast applications.

TURN OFF outward pointing nozzles at row ends and outer rows during airblast applications.

Users of this product **MUST make an accurate written record** of the details of each spray application within 24 hours following application and **KEEP** this record for a minimum of 2 years. The spray application details that must be recorded are: **1)** date and start and finish times of application; **2)** location address and paddock/s sprayed; **3)** full name of this product; **4)** amount used per hectare and number of hectares applied to; **5)** crop/situation and weed/pest; **6)** wind speed and direction during application; **7)** air temperature; **8)** nozzle brand, model and type and spray system pressure measured during application; **9)** name and address of person applying this product. (Additional record details may be required by the State or Territory where this product is used.)

MANDATORY NO-SPRAY ZONES:

No-Spray Zone for Protection of International Trade

DO NOT apply if there are livestock, pasture or any land that is producing feed for livestock downwind from the application area and within the mandatory no-spray zone shown below:

Ground application:

Wind speed range at time of application	Downwind mandatory no-spray zone
From 3 to 20 kilometres per hour	30 metres

No-Spray Zone for Protection of the Aquatic Environment

Ground application:

Wind speed range at time of application	Downwind mandatory no-spray zone
From 3 to 20 kilometres per hour	200 metres

Table 1. Apples

PEST	RATE	CRITICAL COMMENTS
<p>Apple Dimpling Bug (<i>Campyloomma liebknechti</i>)</p> <p>Plague Thrips (<i>Thrips imaginis</i>)</p> <p>Longtailed Mealybug (<i>Pseudococcus longispinus</i>)</p> <p>Tuber Mealybug (<i>Pseudococcus viburni</i>)</p> <p>Codling Moth (<i>Cydia pomonella</i>)</p> <p>Light Brown Apple Moth (<i>Epiphyas postvittana</i>)</p>	<p>70 mL/100 L or 1.4 L/ha</p>	<p>Apply a single application of CORMORAN® in apples targeting either:</p> <ul style="list-style-type: none"> • Apple Dimpling Bug, Plague Thrips and/or Mealybugs from early post flowering; OR • First generation Codling Moth and/or Light Brown Apple Moth <p>Apply CORMORAN® in rotation with registered alternative mode of action insecticides. Refer to pest specific guidelines below.</p> <p>Apple Dimpling Bug and Plague Thrips Apply an alternative mode of action product such as Mavrik® during flowering. Apply CORMORAN® after flowering to protect developing fruitlets from damage caused by Apple Dimpling Bug and Plague Thrips. Monitor insect numbers and apply an alternative mode of action insecticide 5-7 days later if populations approach threshold numbers. Under heavy Plague Thrips pressure, use an alternative registered insecticide such as Mavrik®.</p> <p>Longtailed Mealybug and Tuber Mealybug Apply CORMORAN® as part of a spray program to prevent Mealybugs from migrating into the calyx of the fruit where they are difficult to control. Early control of crawlers is very important. Monitor the crop and apply CORMORAN® as soon as crawlers are seen after petal fall. Apply a different mode of action insecticide 14 days later to maximise knockdown control.</p> <p>Some Mealybugs sheltering in the canopy may not be adequately controlled and these survivors can multiply and infest developing fruit. Further applications of insecticides from other mode of action groups is recommended to ensure control of any surviving Mealybugs.</p> <p>Codling Moth Apply CORMORAN® as part of a season long Codling Moth management program including pest monitoring and targeted insecticide applications. Apply CORMORAN® targeting the first generation of Codling Moth, just prior to the generation egg hatch and before 110 degree-days after Codling Moth are detected in traps. Apply further insecticide applications after a 14 day interval using alternative mode of action insecticides. See Application Timing in GENERAL INSTRUCTIONS for further detail.</p> <p>Light Brown Apple Moth Monitor for Light Brown Apple Moth activity from late flowering using pheromone traps. Apply CORMORAN® after petal fall or 140 degree-days after Light Brown Apple Moth are detected in traps. If required, apply further insecticide applications after a 14 day interval using alternative mode of action insecticides. See Application Timing in GENERAL INSTRUCTIONS for further detail.</p> <p>Application Apply CORMORAN® as a dilute (high volume) spray ensuring thorough coverage of fruitlets and foliage. If the water volume will exceed 2000 L/ha, use the per hectare rate and adjust the dilute concentration accordingly. Concentrate spraying is not recommended when targeting Mealybug as thorough coverage is critical for control.</p> <p>DO NOT apply more than one application of CORMORAN® per season in apples. DO NOT apply CORMORAN® at more than 1.4 L/ha.</p>

Table 2. Pears

PEST	RATE	CRITICAL COMMENTS
<p>Codling Moth (<i>Cydia pomonella</i>)</p> <p>Light Brown Apple Moth (<i>Epiphyas postvittana</i>)</p> <p>Longtailed Mealybug (<i>Pseudococcus longispinus</i>)</p> <p>Tuber Mealybug (<i>Pseudococcus viburni</i>)</p>	<p>70 mL/100 L or 1.4 L/ha</p>	<p>Apply up to two applications of CORMORAN® per season in pears. Always apply CORMORAN® as part of a season long spray program in rotation with registered alternative mode of action insecticides.</p> <p>Longtailed Mealybug and Tuber Mealybug Apply CORMORAN® as part of a spray program to prevent Mealybugs from migrating into the calyx of the fruit where they are difficult to control. Early control of crawlers is very important. Monitor the crop and apply CORMORAN® as soon as crawlers are seen after petal fall. Apply a second spray 14 days later to maximise knockdown control.</p> <p>Some Mealybugs sheltering in the canopy may not be adequately controlled and these survivors can multiply and infest developing fruit. Further applications of insecticides from other mode of action groups is recommended to ensure control of any surviving Mealybugs.</p> <p>Codling Moth Apply up to two sprays of CORMORAN® with a 14 day spray interval. CORMORAN® can be used to control the first generation or later generations of Codling Moth providing that pest monitoring is undertaken and the applications are timed just prior to a generation egg hatch.</p> <p>When targeting the first generation, the first spray should be applied just prior to the generation egg hatch and before 110 degree-days after Codling Moth are detected in traps. See Application Timing in GENERAL INSTRUCTIONS for further detail.</p> <p>Light Brown Apple Moth Monitor for Light Brown Apple Moth activity from late flowering by pheromone trapping. Apply CORMORAN® after petal fall or 140 degree-days after Light Brown Apple Moth are detected in traps. If required, apply a second application after a 14 day interval. Additional treatments should be made using alternative mode of action insecticides. See Application Timing in GENERAL INSTRUCTIONS for further detail.</p> <p>Application Apply CORMORAN® as a dilute (high volume) spray ensuring thorough coverage of fruitlets and foliage. If the water volume will exceed 2000 L/ha, use the per hectare rate and adjust the dilute concentration accordingly. Concentrate spraying is not recommended when targeting Mealybug as thorough coverage is critical for control.</p> <p>DO NOT apply more than two applications of CORMORAN® per season in pears.</p>

NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.

WITHHOLDING PERIODS (WHP):

Harvest:

APPLES: DO NOT HARVEST FOR 70 DAYS AFTER APPLICATION

PEARS: DO NOT HARVEST FOR 35 DAYS AFTER APPLICATION

Grazing:

DO NOT GRAZE ANY TREATED AREA OR CUT FOR STOCKFOOD

CROPS FOR EXPORT

Before using CORMORAN® on crops destined for export it is essential to consult your exporter or ADAMA to ensure that an appropriate MRL is in place in the importing country.

INSECTICIDE RESISTANCE WARNING

For insecticide resistance management, CORMORAN® Insecticide is a Group 15 and

GROUP **15** **4A** INSECTICIDE

Group 4A Insecticide. Some naturally occurring insect biotypes resistant to CORMORAN® and other Group 15 and Group 4A insecticides may exist through normal genetic variability in any insect population. Resistant individuals can eventually dominate the insect population if CORMORAN® and other Group 15 and Group 4A insecticides are used repeatedly. The effectiveness of CORMORAN® on resistant individuals could be significantly reduced. Since occurrence of resistant individuals is difficult to detect prior to use, ADAMA Australia accepts no liability for any losses that may result from the failure of CORMORAN® to control resistant insects. CORMORAN® may be subject to specific resistance management strategies. For further information contact your local supplier, ADAMA representative, local agricultural department agronomist or CropLife Australia Insecticide Resistance Management Strategies.

GENERAL INSTRUCTIONS

MIXING

Two thirds fill the spray tank with clean water with the agitator operating, then add the required quantity of CORMORAN® Insecticide. Top up the spray tank to the required volume with clean water with the agitator running. Maintain agitation while spraying.

COMPATIBILITY

As formulations of other manufacturer's products are beyond the control of ADAMA, all mixtures should be tested prior to mixing commercial quantities. For more information on CORMORAN® product compatibility, check the ADAMA website adama.com.

APPLICATION INFORMATION

Good insect control requires even, thorough coverage of the treated area.

Application Timing for Codling Moth and Light Brown Apple Moth

All insects have an optimum temperature range for growth and development. At temperatures above or below the maximum or minimum temperature range for the particular insect, the growth rate rapidly declines.

Insect development is measured in cumulative thermal time units called degree-days. A degree-day (°D) is each degree of temperature by which the average temperature on a day exceeds the lower developmental threshold.

Pheromone traps in conjunction with degree-day modelling can be used to predict when first generation egg lay will occur. The thermal time taken from mating to egg hatch for Codling Moth and Light Brown Apple Moth is approximately 110°D and 140°D respectively. This equates to 7-14 calendar days and 10-15 calendar days respectively.

Dilute spraying

Use a sprayer designed to apply high spray volumes, up to the point of run-off and matched to the crop being sprayed. Set up and operate the sprayer to achieve even coverage throughout the crop canopy. Apply sufficient spray volume to cover the crop to the point of run-off. Avoid excessive run-off.

The required spray volume to achieve point of run-off may be determined by applying different test volumes, using different settings on the sprayer, or from industry guidelines or other expert advice.

Add the amount of product specified in the Directions for Use table for each 100 L of water. Spray to the point of run-off. The required dilute spray volume to achieve point of run-off will change and the sprayer set up and operation may also need to be changed, as the crop grows.

Concentrate Spraying

Use a sprayer designed and set up for concentrate spraying (that is a sprayer which applies water volumes less than those required to reach the point of run-off) and matched to the crop being sprayed. Set up and operate the sprayer to achieve even coverage throughout the crop canopy using your chosen water volume. Determine an appropriate dilute spray volume (see Dilute Spraying above) for the crop canopy. This is needed to calculate the concentrate mixing rate. The mixing rate for concentrate spraying can then be calculated in the following way:

EXAMPLE ONLY

1. Dilute spray volume as determined above: For example 2000 L/ha
2. Your chosen concentrate spray volume: For example 1000 L/ha
3. The concentration factor in this example is: 2 X (i.e. 2000 L/1000 L = 2)
4. As the dilute label rate is 70 mL/100 L, then the concentrate rate becomes 2 x 70, that is 140 mL/100 L of concentrate spray.

The chosen spray volume, amount of product per 100 L of water, and the sprayer set up and operation may need to be changed as the crop grows. Do not use a concentrate rate greater than 2 X. For further information on concentrate spraying, users are advised to consult relevant industry guidelines, undertake appropriate competency training and follow industry Best Practices.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

Dangerous to aquatic invertebrates. DO NOT contaminate ponds, waterways or drains with the chemical or used containers. DO NOT apply under weather conditions or from spraying equipment that may cause spray to drift from the target area onto wetlands, natural surface waters, neighbouring properties or other sensitive areas.

PROTECTION OF HONEY BEES AND OTHER NON-TARGET INSECTS

Dangerous to bees. Do not apply during flowering. Will kill bees foraging in the crop to be treated or in hives which are over-sprayed or reached by spray drift. Residues may remain toxic to bees for several days after application. Risks to non-target insects – CORMORAN® may have adverse effects on some non-target beneficials, in particular where IPM is practiced, to foliage dwelling predators.

STORAGE AND DISPOSAL

1-100 L

Store in the closed, original container in a cool, well-ventilated area. DO NOT store for prolonged periods in direct sunlight. Triple-rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots, in compliance with relevant local, state or territory government regulations. Do not burn empty containers or product.

110 L Micro Matic Valve

Store in the closed, original container in a cool, well-ventilated area. DO NOT store for prolonged periods in direct sunlight. DO NOT tamper with the Micro Matic valve or the security seal. DO NOT contaminate the container with water or any foreign matter. After each use of the product, please ensure that the Micro Matic coupler delivery system and hoses are disconnected, triple rinsed with clean water and drained accordingly. When the contents of the container have been used, please return the container to the point of purchase. The container remains the property of ADAMA Australia.

SAFETY DIRECTIONS

Harmful if swallowed. Will damage eyes. Repeated exposure may cause allergic disorders. Avoid contact with eyes and skin. When opening the container and preparing and using the prepared spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and goggles. If product in eyes, wash out immediately with water. Wash hands after use. After each day's use wash gloves, goggles and contaminated clothing.

FIRST AID

If poisoning occurs contact a doctor or Poisons Information Centre. Phone Australia 13 11 26.

SDS

Additional information is listed in the safety data sheet (SDS). A safety data sheet for CORMORAN® Insecticide is available from adama.com or call Customer Service on 1800 423 262.

CONDITIONS OF SALE:

The use of CORMORAN® Insecticide being beyond the control of the manufacturer, no warranty expressed or implied is given by ADAMA Australia regarding its suitability, fitness or efficiency for any purposes for which it is used by the buyer, whether in accordance with the Directions for Use or not. ADAMA Australia accepts no responsibility for any consequence whatsoever resulting from the use of this product.

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